



Hyperfine structure of ^{227}Ac and commissioning of an Atomic Beam Unit

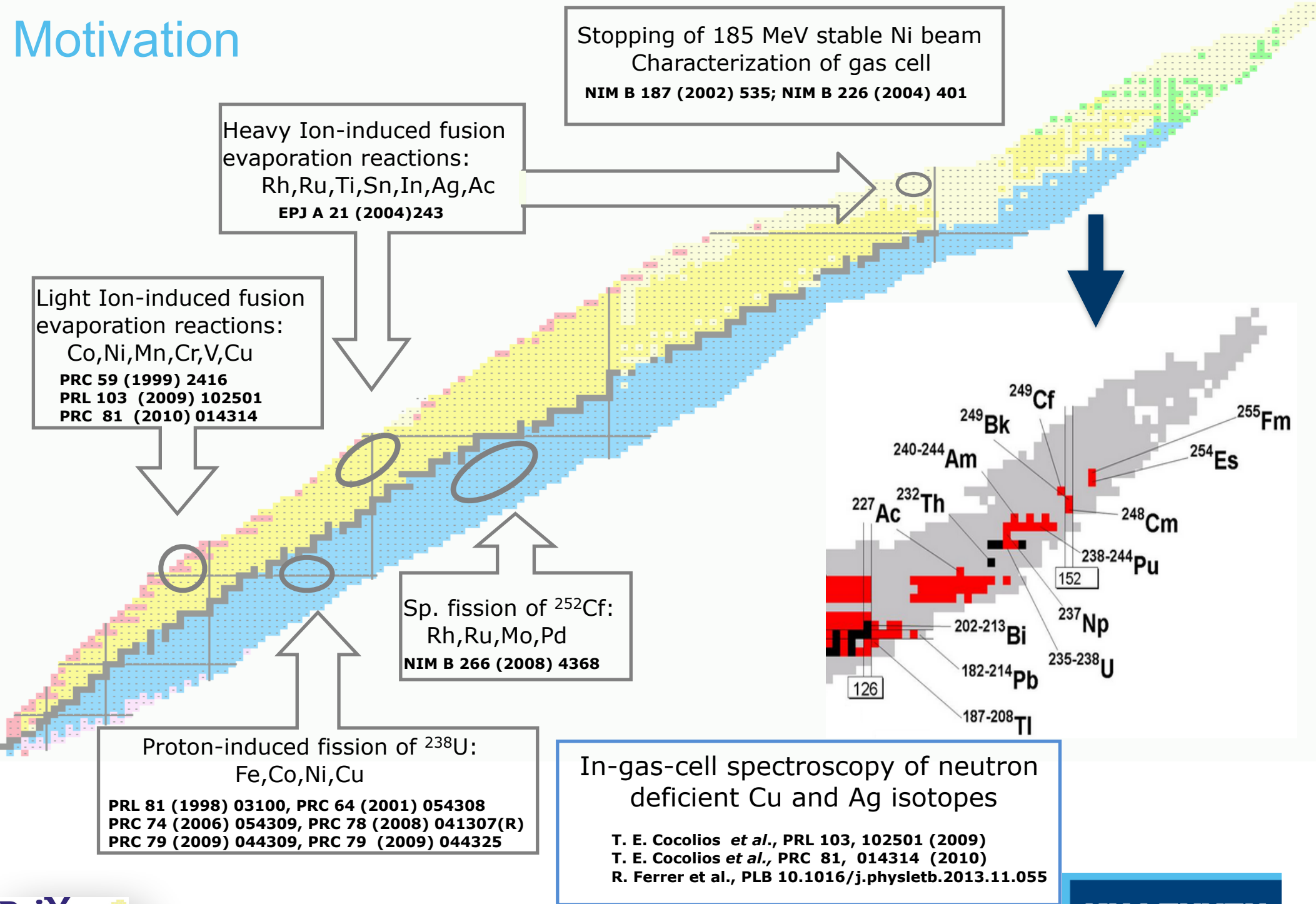
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Outline

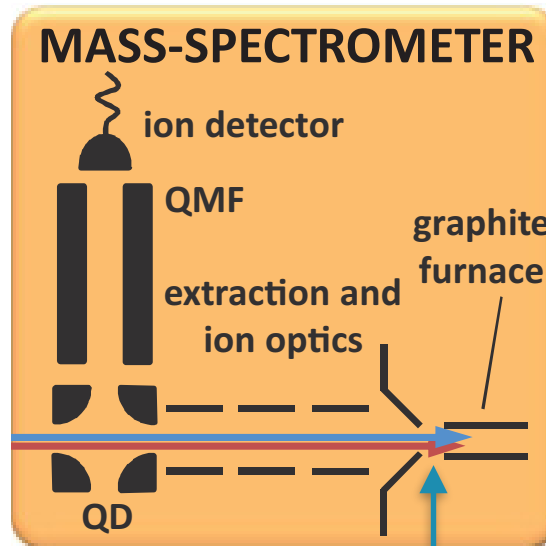
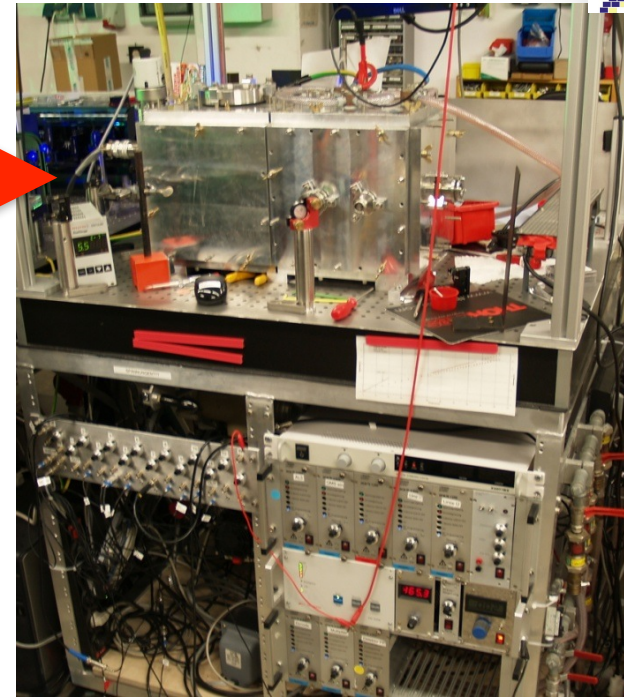
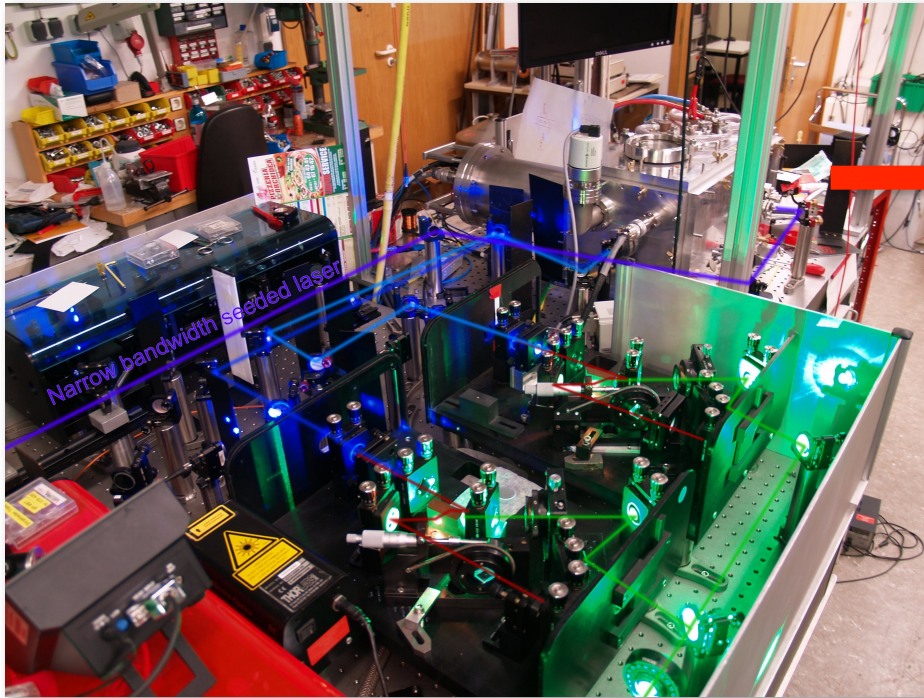
- 1) Motivation
- 2) ^{227}Ac Hyperfine structure
 - 1) Experimental setup
 - 2) Work done previously
 - 3) Results
- 3) Atomic beam unit
- 4) Conclusions

Motivation

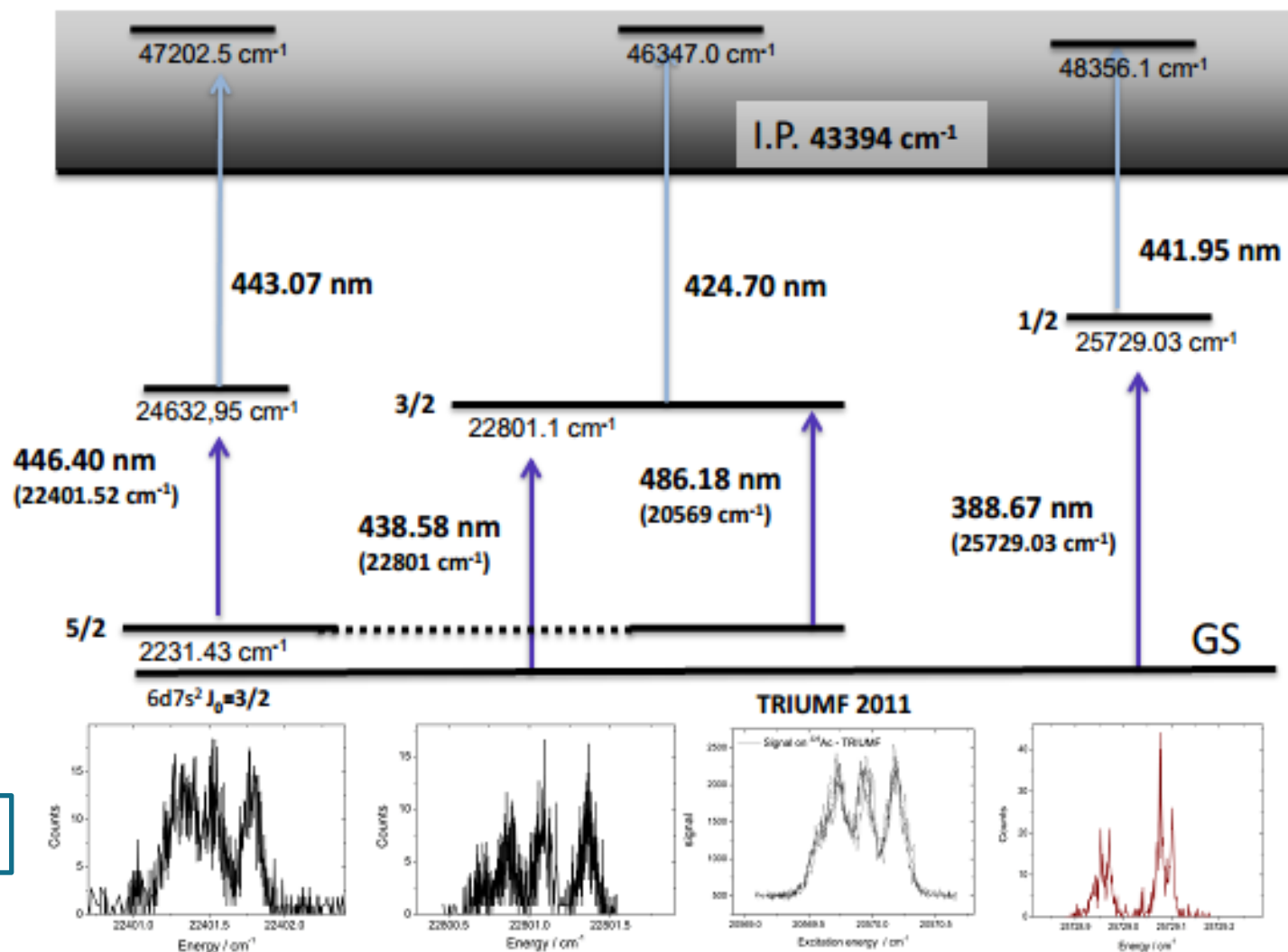


^{227}Ac Hyperfine structure

Experimental setup.

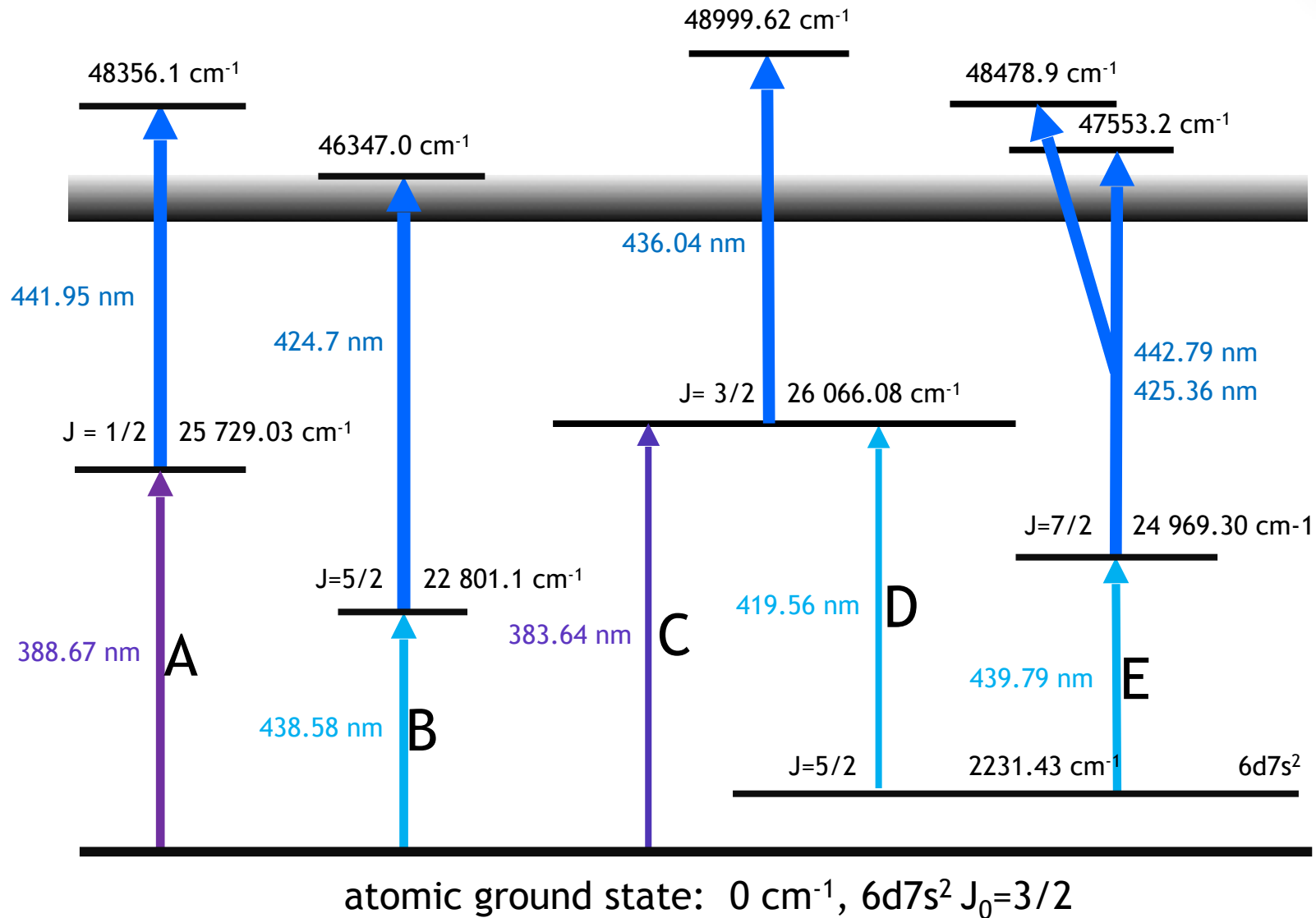


Previous work

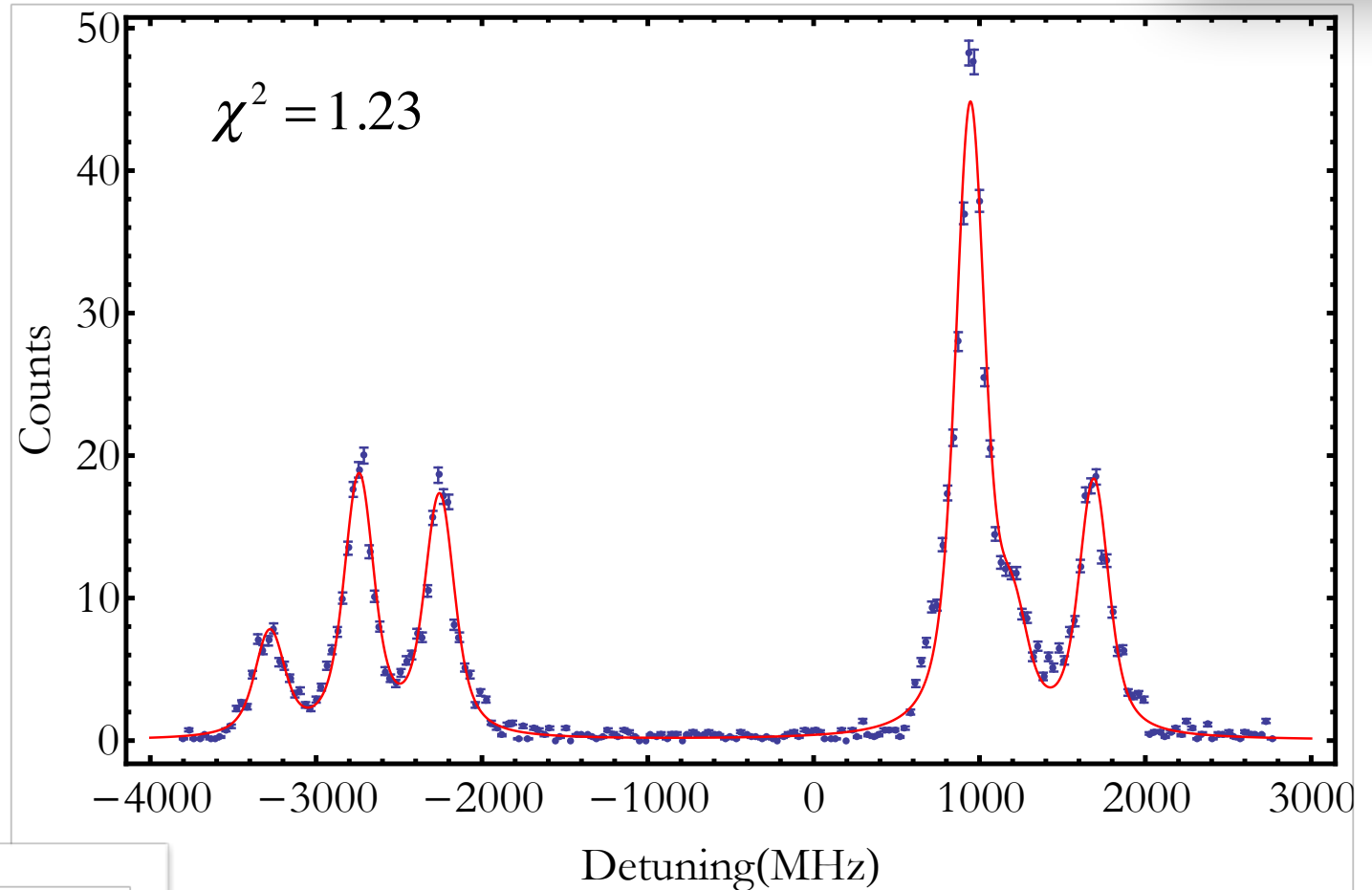
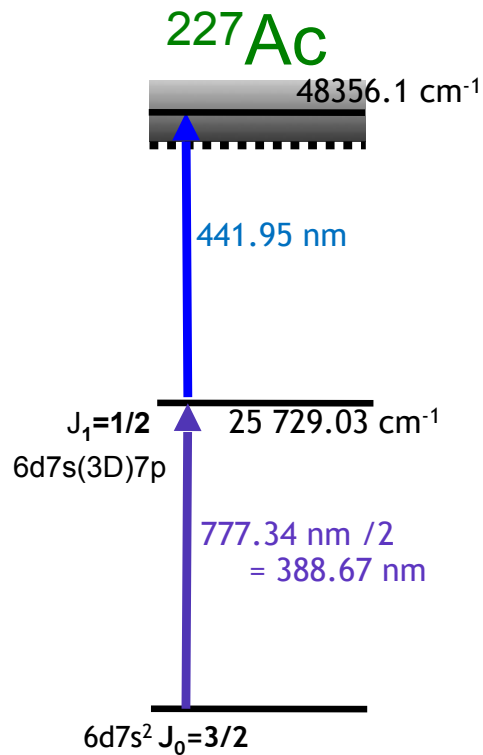


HF spectra

Investigated Hyperfine structure



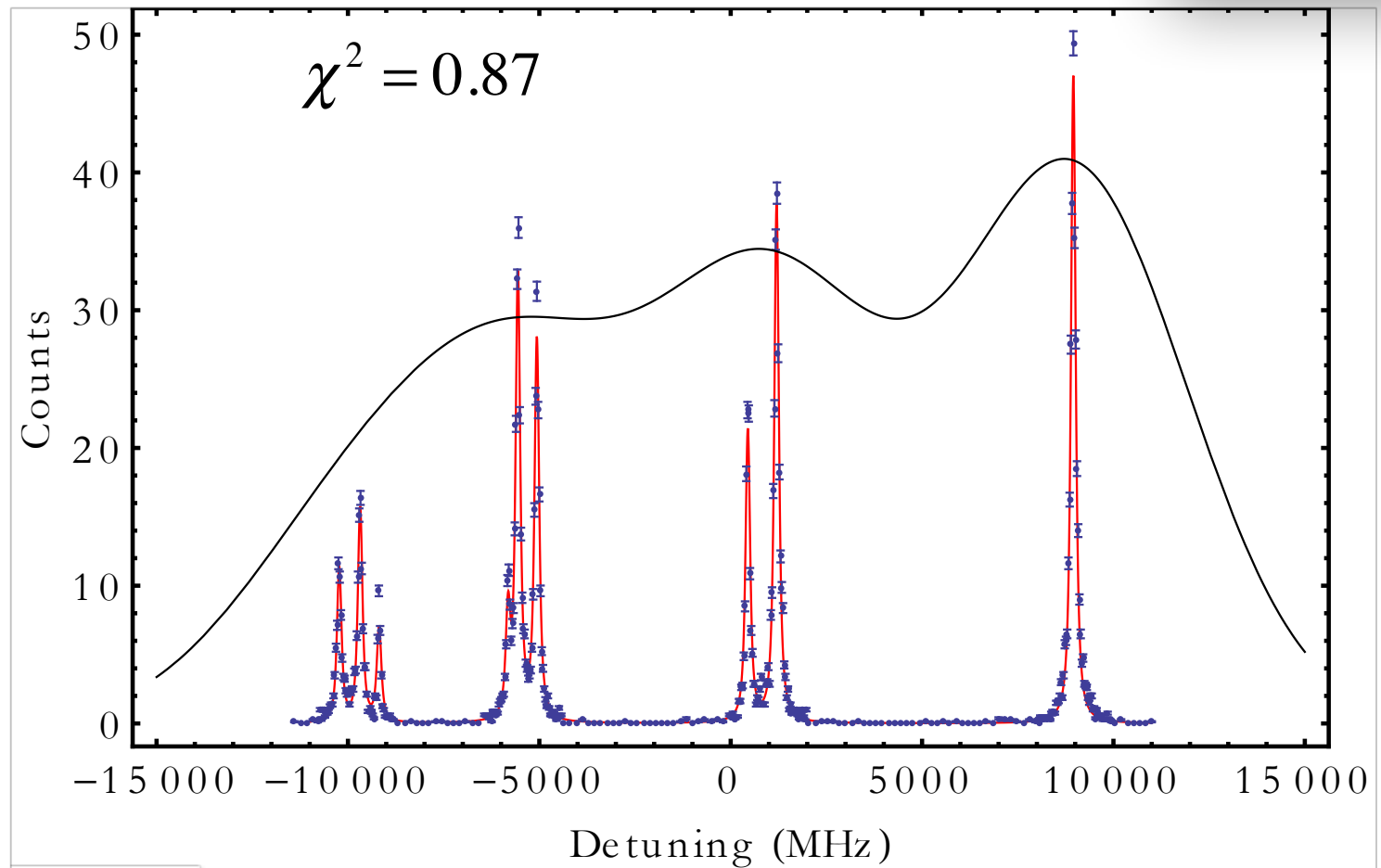
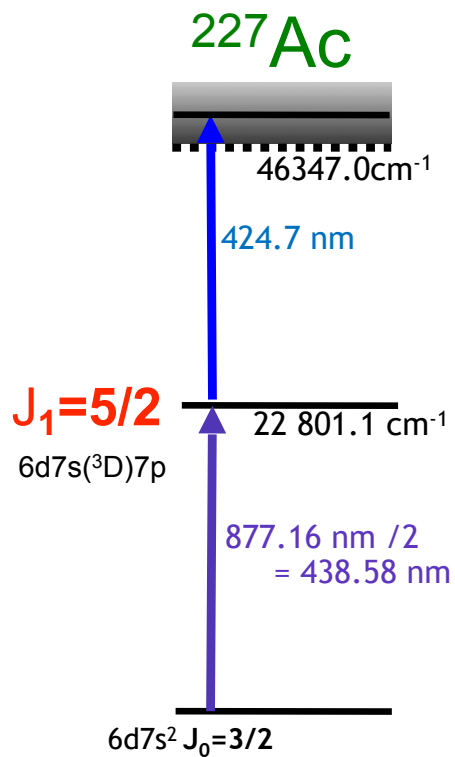
Transition A:



Parameter	Value(MHz)	σ (MHz)
A_{gs}	52	1
B_{gs}	590	3
A_{es}	1973	3
B_{es}	0	0

- Data from 17 scans
- Structure is full resolved
- Resolution 100 MHz

Transition B

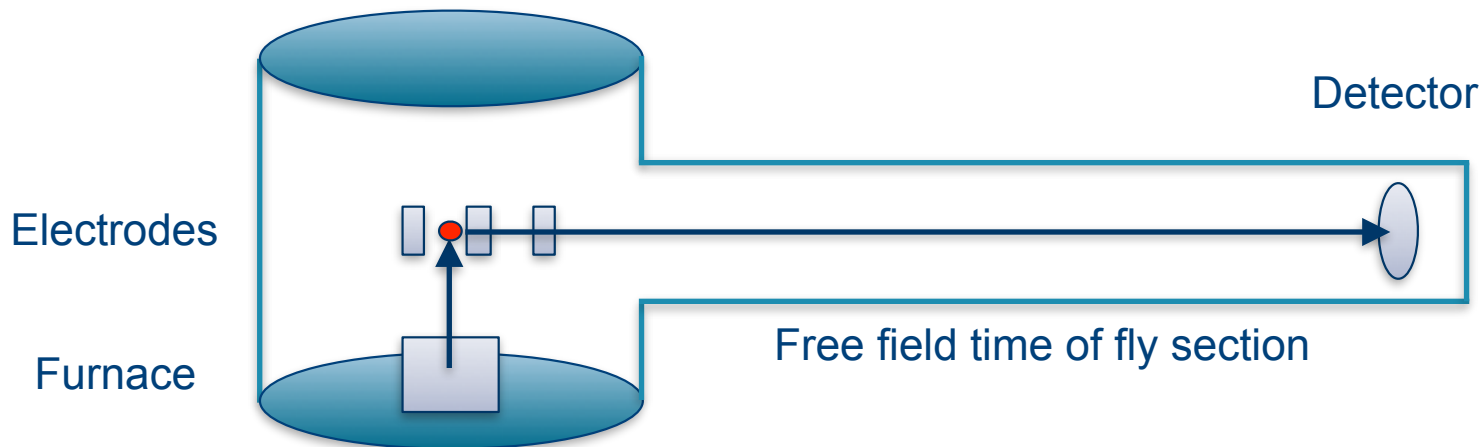
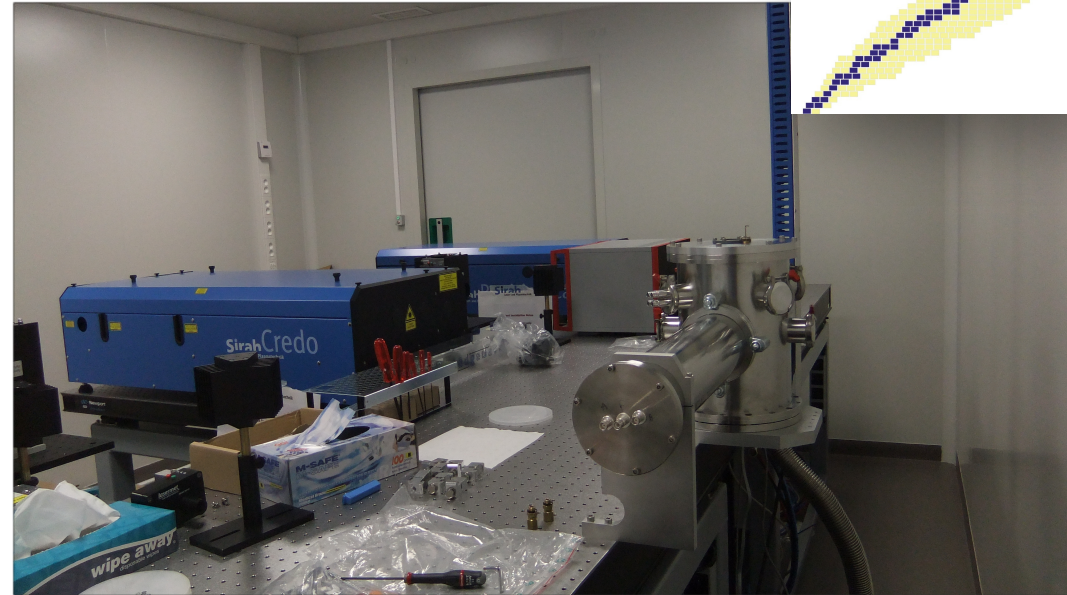
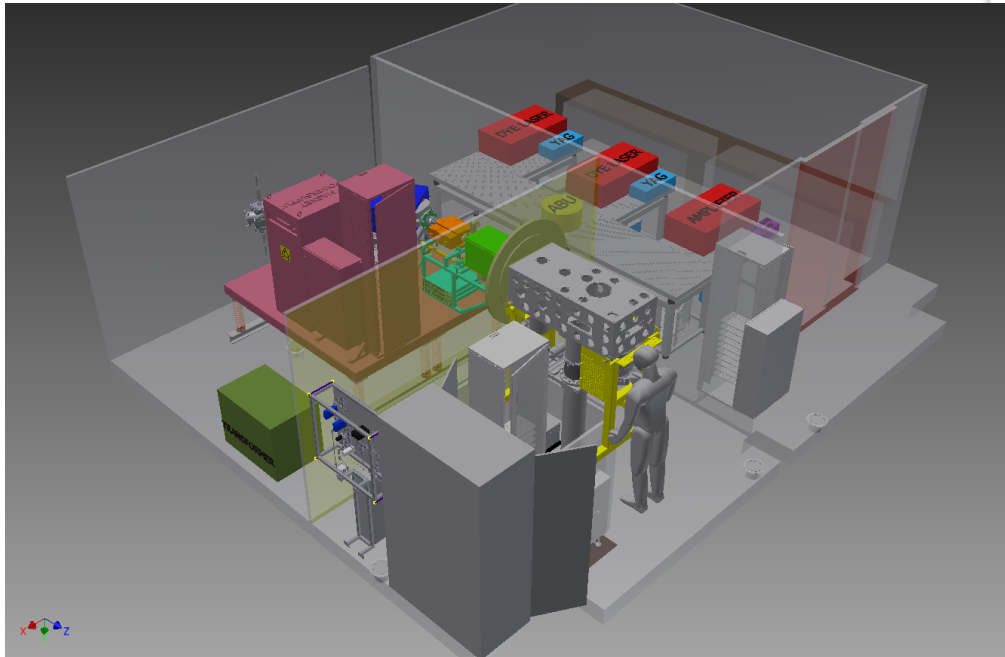


Parameter	Value(Mhz)	σ (MHz)
A_{gs}	51	1
B_{gs}	597	2
A_{es}	2104	1
B_{es}	108	2

- 10 scans used.
- Suitable for in gas cell spectroscopy (LISOL).

In gas laser ionization and spectroscopy at Leuven

Atomic Beam Unit



Conclusions

- 1) Laser spectroscopy of ^{227}Ac has been performed.
- 2) Reference to study other Ac isotopes at LISOL.
- 3) New laser laboratory at KU Leuven to develop in gas-jet laser spectroscopy.

Thank you for the attention

